4/25/17 "Too many of us are not living our dreams because we are living our fears."-Les Brown

HW: "Angles" Finish Exercise Set A (skip #16-19)
Test 1 on Tuesday 5/2

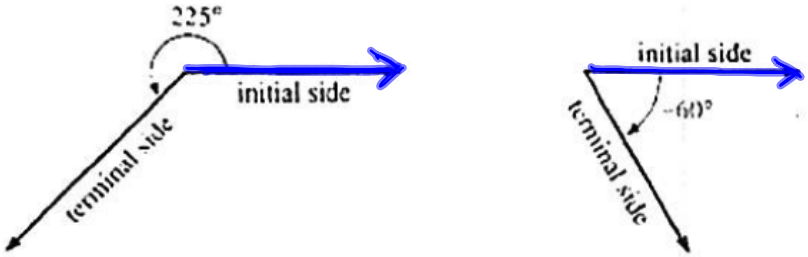
AIM: What is an angle?

Warm Up:

MIT

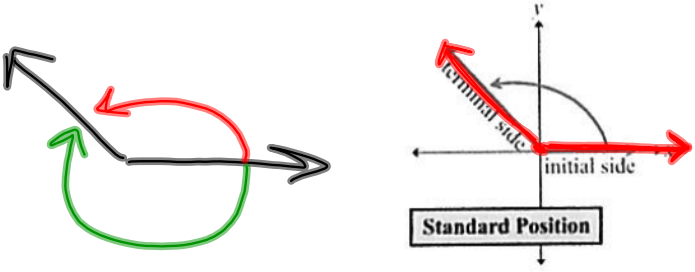
Topic: Trigonometry

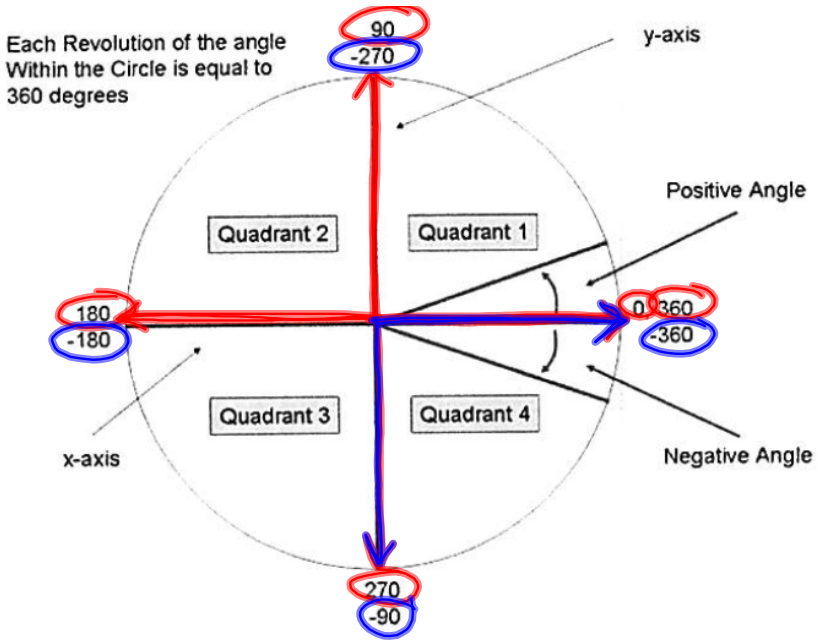
Two rays that have the same endpoint form an angle. One ray is fixed while the other ray is allowed to move around the endpoint. The endpoint of the rays is called the ***vertex*** of the angle. The fixed ray is the initial side of the angle, and the rotated ray is the terminal side. *Counterclockwise* rotations produce positive angles and *clockwise* rotations produce negative angles.



Std position: vertex @ origin
initial side is positive x-axis

An angle in ***standard position*** has its vertex at the origin of a coordinate system and the initial side of the angle coincides with the positive *x*- axis. Depending on whether the terminal side falls in Quadrant I, II, III, or IV, we say that the angles lies in the first, second, third or fourth quadrant.





(*) θ = "Theta" = angle measure

An angle whose terminal side coincides with a coordinate axis is called a ***quadrantal angle***.

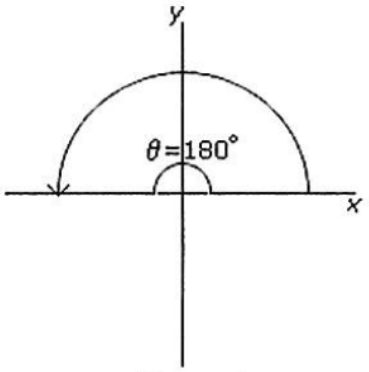


Figure 1

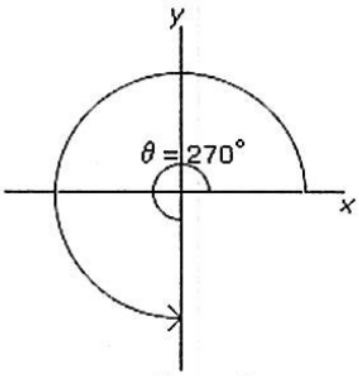
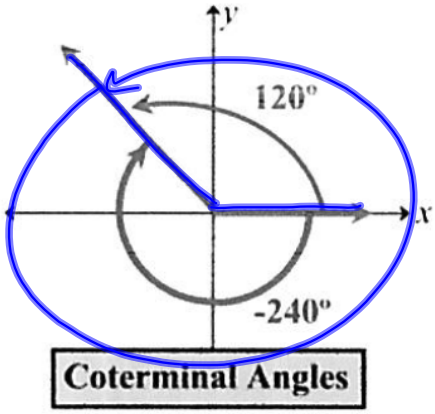


Figure 2

Angles sharing the same initial and terminal sides are called ***coterminal angles***.

* End in same spot



Coterminal Angles

To find coterminal angles: Add or subtract 360°.

If two angles are coterminal, their difference is : a multiple of 360°.
(Subtract the angles)

Exercise Set A

For 1 – 19, determine in which quadrant the angle of the given measure lies.

1. 215° III	2. -110°	3. 318°
4. 72° I	5. 95°	6. -45°
7. 225° III	8. 150°	9. 422°
10. -240° II	11. 680°	12. 23°
13. 812° II	14. -300°	15. 289°

812 - 360 = 452 - 360 = 92

For 20 - 27, name the least possible positive measure and the greatest possible negative measure of an angle that is coterminal with the given angle.

20. 70°

least positive

70 + 360 = 430°

70 - 360 = -290°

greatest negative

21. -60°

-60 + 360 = 300°

-60 - 360 = -420°

26. -180°

-180 + 360 = 180°

-180 - 360 = -540°

27. -930°

-930 + 360 = -570 + 360 = -210

-210 + 360 = 150

For 28- 31, determine whether the following pairs of angles in standard position are coterminal.

28. 40° and 400°

40 - 400 = -360

Yes b/c -360 is a multiple of 360

29. -120° and 120°

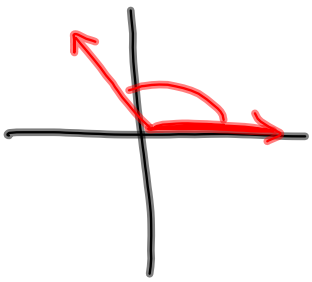
-120 - 120 = -240

120 - -120 = 240

No, not a multiple of 360

For 32 - 41, sketch an angle in standard position with the given measure

32. 100°



33. 360°

34. 90°

41. 1140°